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The purpose of this study was to ascertain both the cognitive and creative output of white and Negro children. Intelligence and creativity test batteries were administered to 34 Negro and to 36 white eighth grade children in segregated, rural schools in a culturally deprived area of Georgia. Specific hypotheses tested were: (1) the level of cognitive functioning of Negro students differs significantly from that of white students in similar socioeconomic conditions, (2) white students score significantly higher than Negroes on measures of creativity, (3) creativity scores provide an understanding of students in addition to that proved by the traditional tests of intelligence, and (4) sex differences exist in both cognitive and creative ability. A one-way analysis of variance was used to obtain differences in creativity and cognitive ability for sex and race. The first hypothesis was supported. The second indicated that whereas white students were better able to verbalize than Negroes, the latter scored higher on figural elaboration. Sex differences were insignificant. Implications are inconclusive, but suggest that a deeper understanding of creativity coupled with improved educational practices to enhance creative expression might provide more meaningful educational experiences to the disadvantaged child. (Author/CJ)

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Creative and Cognitive Abilities of White and Negro Children

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Creative and Cognitive Abilities of White and Negro Children

The differential cognitive performance of white and Negro children finds strong support today among researchers in education and psychology. Typical of studies in this area is one by Semler and Iscoe (1966) which reports results indicating that white children score significantly higher than Negroes on WISC full scale scores at each level from 5 through 9 years of age. Gordon Liddle (1967) offers a possible explanation for such findings by maintaining that the culturally handicapped child often has greater native ability than he demonstrates on our present measures of intelligence. These lower results on intelligence tests appear to be a result both of the cultural bias of testing instruments and of the different experiences of the child in a lower socio-economic subculture. Typically this child has less variety and amount of verbal stimuli than the middle-class child, and is therefore unlikely to be able to demonstrate a similar richness and understanding of verbal responses. It is a continuing challenge to educators to be able to assess the culturally handicapped child's ability in order to determine how the educational experience can be most profitable to him.

One possible means for understanding more fully the total potential of the child lies in instruments that reveal his level of creative thinking. In fact, an increasing amount of research concerning the creative abilities of children raises interesting possibilities that education may be more meaningful if it makes use of the unique creativity of the child. Torrance and Witt (1966) describe the LEAP project which provided creative experiences for children of poverty stricken homes. The LEAP project was designed to release and enhance the creative potential of underprivileged children. The authors reported success in increasing the child's level of creative expression and concluded that creative but underprivileged children are more rejected than are middle class children in their efforts to find outlets for creative expression. Janssen (1968) and Jackson and Marsden (1962) report that dropout students with a lower socio-economic class background are more creative than non-dropout students

from the lower socio-economic class. It is also interesting to note that Janssen's findings are based on a sample of children in the U. S. whereas Jackson and Marsden are describing results for a sample of British children. There seems reason to postulate that more creative experiences not only might keep the drop-out in school longer but could in general be quite beneficial for the disadvantaged child who may have experienced seriously limited opportunities for creative expression.

Thus, if we are to compensate for the decrement in educational experience of the disadvantaged child, it may be quite helpful to understand his level of creative ability. A remedial educational program for children in poverty-stricken homes can likely benefit by enhancing the child's creative experiences. One of the first tasks then is to gain a clearer understanding of the nature of the creative thinking ability of the culturally disadvantaged. Research to date, though limited, tends to indicate that the Negro child does not score as high in creative thinking as his white counterpart. (Torrance, 1963) The purpose of the present study is to ascertain both the cognitive and creative output of white and Negro children in order to understand better the need for educational experiences appropriate to their current level of functioning.

Method

Subjects were 34 Negro and 36 white children in 8th grade classes that were segregated at the time research was conducted. All S's resided in rural areas of small villages in northeast Georgia; thus their cultural background can be properly designated as southern rural. Socio-economic circumstances of both groups would vary generally from lower to lower-middle class with more of the white students falling near a middle class grouping. Teachers of both groups indicated that a majority of the students could be considered culturally disadvantaged but agreed that the white students were slightly better off in this respect than the black.

All tests were administered on two successive days by the same examiners. The test battery included the Lorge-Thorndike Tests

(level 4) which include a verbal and a non-verbal measure of cognitive functioning and the Torrance Tests of Creative Thinking, Verbal and Figural, Form B. This creativity test is composed of seven factors, three verbal and four figural. A brief description of the abilities measured by each factor is taken from Torrance (1966).

Verbal Fluency - The ability to produce a large number of ideas in words.

Verbal Flexibility - ability to produce a variety of kinds of ideas, or to shift from one approach to another. A low score in this area may indicate a rigid pattern or habit of thinking, a narrow range of information and/or experiences, limited intellectual energy, and/or low motivation.

Verbal Originality - ability to produce ideas different from the commonplace. High scores may characterize one who is nonconforming and also requires the ability to delay gratification or to reduce tension.

Figural Fluency - ability to produce a large number of ideas in words. As with verbal fluency, the commonplace thinker or impulsive thinker may score quite high on this factor.

Figural Flexibility - ability to use a variety of strategies, to shift from one idea to another in figural modes of thinking.

Figural Originality - even more so than for verbal originality a high score on this factor requires the ability to delay gratification or the reduction of tension.

Figural Elaboration - ability to develop, embellish or otherwise elaborate ideas. Delinquents and dropouts may have a low score whereas a high score is more typical among girls than boys and tends to reflect a high sensitivity in observation.

The hypotheses to be tested were: (1) the level of cognitive functioning of Negro students differs significantly from that of white students in similar socio-economic conditions. (2) White students score significantly higher than Negroes on measures of creativity. (3) Creativity scores provide an understanding of students in addition to that provided by the traditional tests of

intelligence. (4) Sex differences exist in both cognitive and creative ability.

Results

A one-way analysis of variance was used to obtain differences in creativity and cognitive ability for sex and race. A two-way analysis of variance was used to note any possible interaction effects of sex and race, although such interaction effects between these two variables are generally surmised to be non-significant. This supposition was supported in this study. Results of the analysis of variance are reported in Table 1.

The first hypothesis was supported in that white students did achieve significantly higher than Negro students on both verbal and non-verbal measures of intelligence. The second hypothesis, that Negro students would score lower on creativity factors was supported, but only in part. White students were superior on verbal fluency, verbal flexibility, figural flexibility, and figural originality. There was no significant differences between white and Negro on verbal originality and Negroes scored higher on figural elaboration. Sex differences were significant only on the construct of figural elaboration with females scoring higher than males. There were no significant sex differences on either verbal or non-verbal measures of intelligence.

Referring to the descriptions of the creativity factors again and summarizing the differences between white and Negro students produces some interesting speculations. The white student is more capable of producing a large number of ideas in words but is not able to produce a higher number of ideas by figural means. This may reflect a difference in verbal stimuli in the experiences of the two groups rathern than any innate difference in creativity. The Negro child in this study is lower in flexibility, both in its figural and verbal expression. He is seen as inferior in ability to produce a variety of kinds of ideas or to shift from one strategy to another. He is characterized by a rigid pattern of thinking, a narrow range of information, limited intellectual energy, low motivation. It

is possible that the Negro child in our culture is conditioned to adopt a rigid pattern of behavior that does not reward and thus motivate him to widen his range of information or to extend the limits of his intellectual energy.

The originality factor of creativity is alluded to (Torrance, 1966) as holding the most promise for identifying the truly innovative person who may offer new insights into existing problems. Scores on verbal originality and figural originality may be interpreted in much the same way; e.g., high scores characterize one who is nonconforming and who is able to delay gratification or the reduction of tension, except that figural originality is considered more positively related to the ability to delay gratification or the reduction of tension. Thus, the higher scores for white students on figural originality but not on verbal originality suggest that these Negro children are not basically more conforming but perhaps are less interested in delaying gratification or the reduction of tension. Delaying gratification or the reduction of tension must be a realistic form of behavior only if one sees an opportunity to achieve gratification and the reduction of tension to a greater degree at a later time. Again, these Negro children may be very realistic in not holding forth the same hope as the white child that the future will be more rewarding than his present experiences. This is an issue that needs comprehensive research.

The elaboration factor of creativity, which was obtained for the figural but not the verbal tests was the only creativity factor on which Negroes exceeded whites, and females exceeded males. It is somewhat difficult to interpret this finding since a high score is considered less typical of delinquents and dropouts and yet statistics indicate that Negroes are more apt to be in both of these categories than white students. It is less likely that females will fit these categories as frequently as males. It is possible that its explanation reflects more the ability to develop, embellish or otherwise elaborate ideas and to reflect a high sensitivity in observation. At the time of administering the tests and prior to analysis of any

results both examiners commented on the difference between the two classes of Negro and white students. It was obvious that the Negro students were quieter, more intense in their concentration on what we were saying and what they were doing, and much more courteous. Almost as a group they asked us to come back to visit them again. We understood this at the time as a reaction of southern Negroes to white persons. Is it also possible that their experiences have made them more sensitive observers of the human scene? That could, indeed, be a threatening observation to the educational endeavor which is rejected by and more rejecting toward the Negro than the white child. Another possible explanation lies in the school experiences of these children. A rigid, authoritarian, educational experience may produce high scores in elaboration but not in originality.

In summary and in support of the final hypothesis of this study, it is obvious that measures of creativity do provide the educator with data on the child that is not obtained through the traditional measures of intelligence. Although it is not possible to generalize broadly from this one restricted sample, it appears that a more comprehensive understanding of creativity together with the implementation of educational practices to enhance creative expression can be useful in providing meaningful educational experiences to the disadvantaged child.

Table 1

Cognitive and Creative Ability of 8th Grade Students*

	VIQ	NVIQ	VFLU	VFLE	VORIG	FFLU	FFLE	FORIG	FELAB
Negro	81.17	81.07	36.35	20.18	26.74	15.26	10.65	16.56	69.38
White	95.09	98.09	58.25	27.89	36.25	17.47	14.28	23.44	56.44
F	16.73	24.85	17.23	12.40	3.60	2.20	10.80	6.40	4.40
Male	85.82	90.38	45.29	22.97	28.29	15.39	12.58	20.79	56.34
Female	91.67	89.80	50.38	25.53	35.59	17.59	12.44	19.28	70.31
F	2.41	0.02	0.75	1.16	2.04	2.16	0.01	0.28	5.11

$F < .05 = 3.99$

$F < .01 = 7.04$

* Mean Scores and F as derived by ANOVA.

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